Introduction to the Coastal Carolinas and ACF DEWS

Drought in the Southeast Webinar
January 11, 2017

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History of the National Integrated Drought Information System (NIDIS)

Authorized in 2006

- **Why:**
  - Recognition that better informed and more timely drought-related decisions lead to reduced impacts and costs.

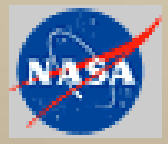
Reauthorized in 2014

- Authorizes the appropriation of funds (via NOAA) through FY2018
- Develop and expand the Regional Drought Early Warning Systems

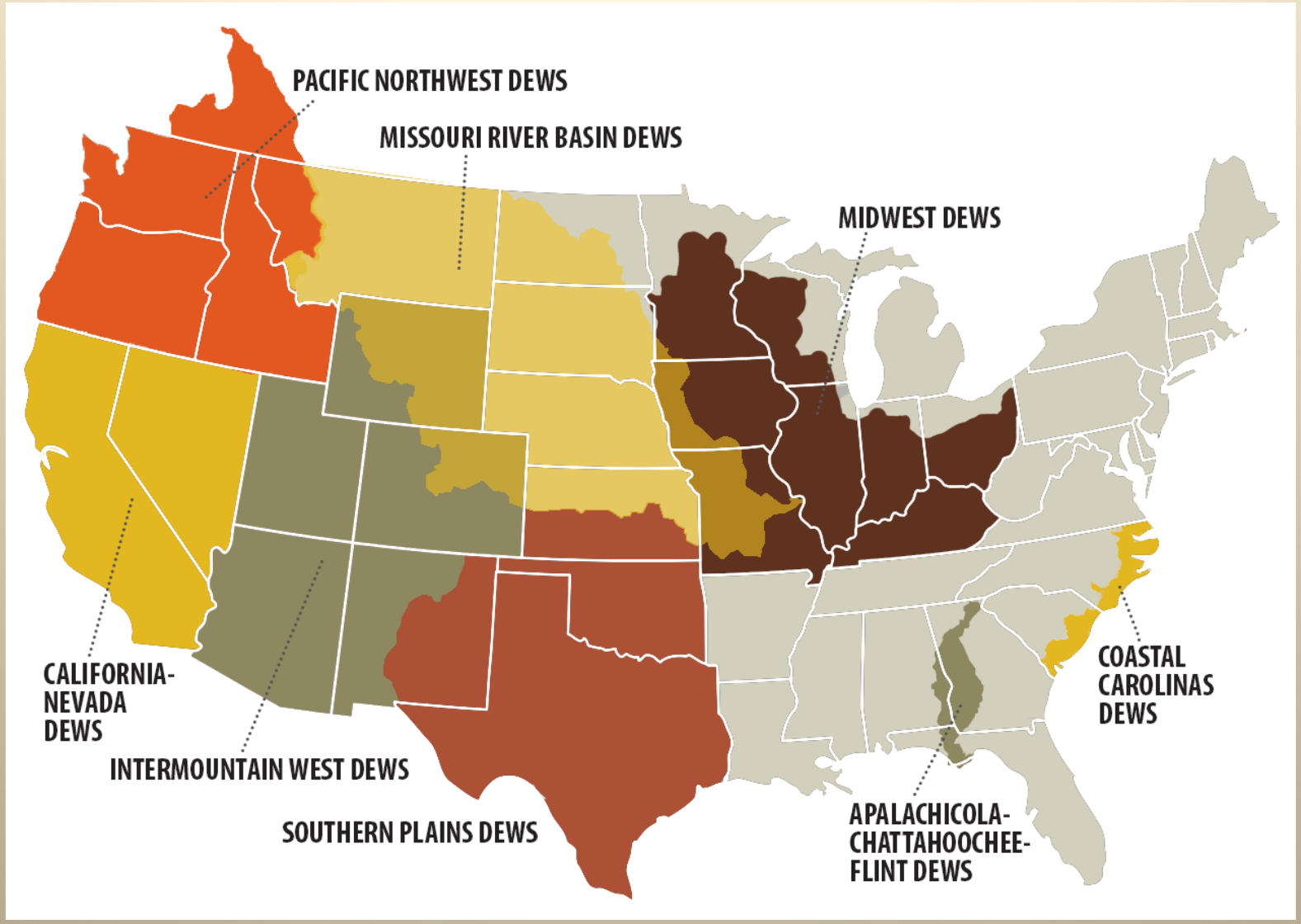
- **Goal:** ***"Enable the Nation to move from a reactive to a more proactive approach to managing drought risks and impacts"*** **PL 109-403**

What is NIDIS?

- NIDIS is congressionally authorized with specific mandates (Public Laws 109-430 and 113-86)
- Brings drought information, research, education, policy and networking together
- NOAA program that operates on an inter-agency level

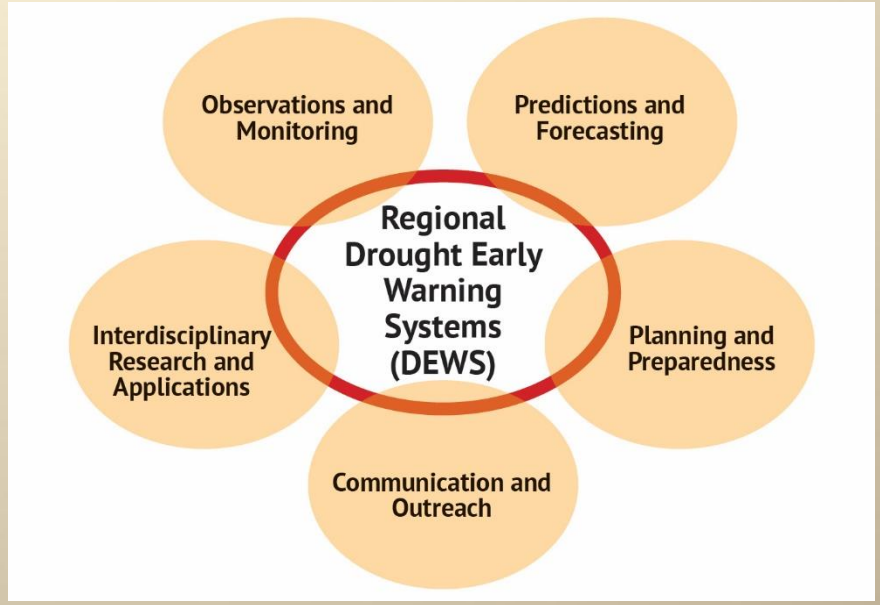
NIDIS Regional Drought Early Warning Information Systems



What is a Drought Early Warning System?

WHAT IS A DEWS?

A DEWS utilizes new and existing networks of federal, tribal, state, local and academic partners to make climate and drought science accessible and useful for decision makers; and to improve the capacity of stakeholders to monitor, forecast, plan for, and cope with the impacts of drought.

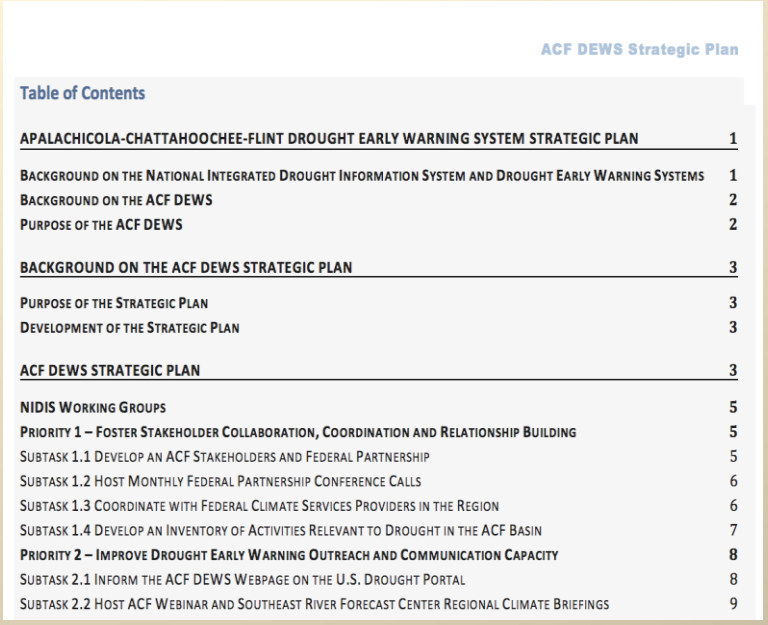


DEWS Strategic Plan

Roadmap for moving forward with the DEWS
Two year timeframe although "live document"

Components

- Priorities
- Subtasks
- Partners and leads
- Deliverables
- Timeframe



ACF DEWS Strategic Plan

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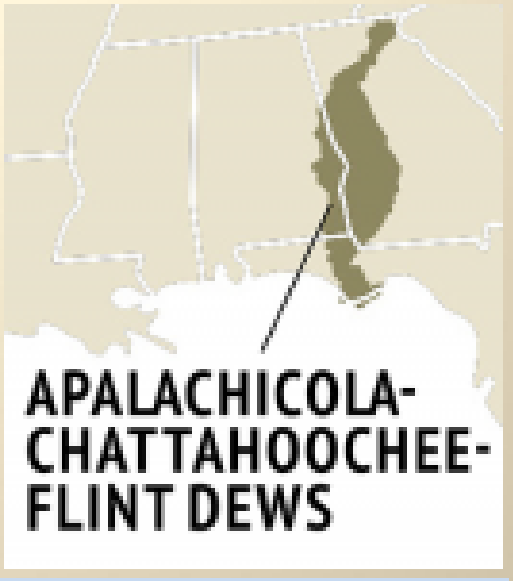
Benefits

- Fosters a regional network
- Collaboration and coordination
- Reference to help generate policy and governmental support
- Resource to assist with leveraging funds
- Foster sharing of activities and info across DEWS

ACF DEWS

Initial Stakeholder Meetings

- Lake Blackshear, Dec 2009
- Apalachicola, April 2010
- Middle Chattahoochee and Flint, May 2010
- Upper Chattahoochee, Aug 2010
- Albany, Dec 2010
- Lake Lanier, Dec 2011

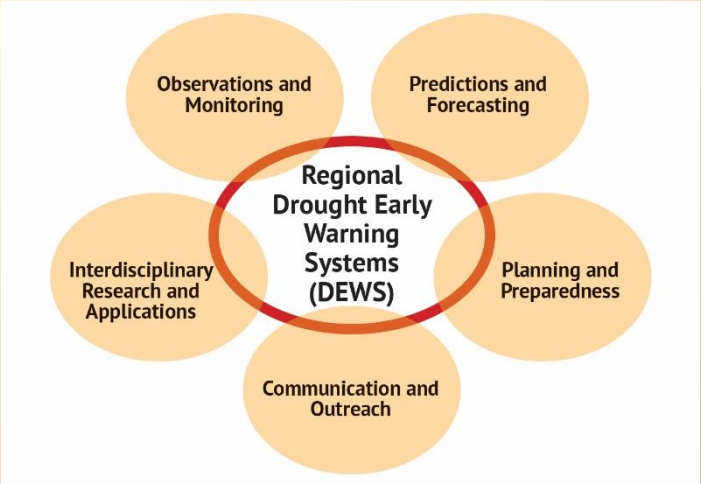


Meetings illuminated a need for communication and education around drought

"NIDIS is considered a trusted and unbiased source of information, the information was appropriate and useful covering the whole basin, benefits people's awareness and communication, and the format of the information makes it easy to share and read later."

Priorities of the ACF DEWS

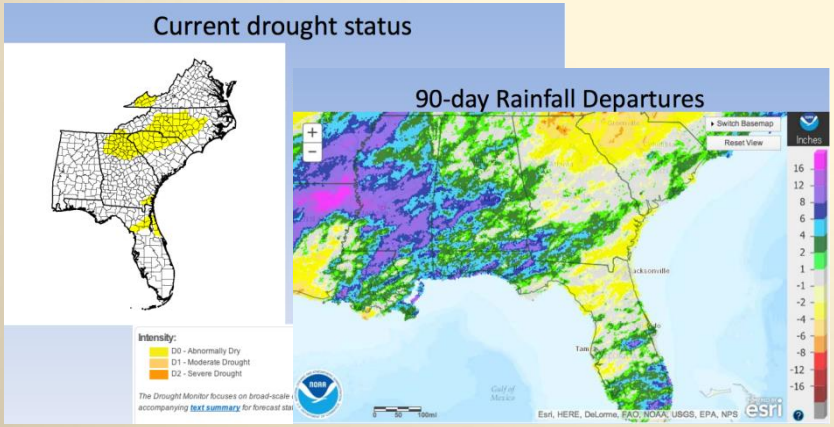
- Foster stakeholder collaboration, coordination and relationship building
- Improve drought early warning outreach and communication capacity

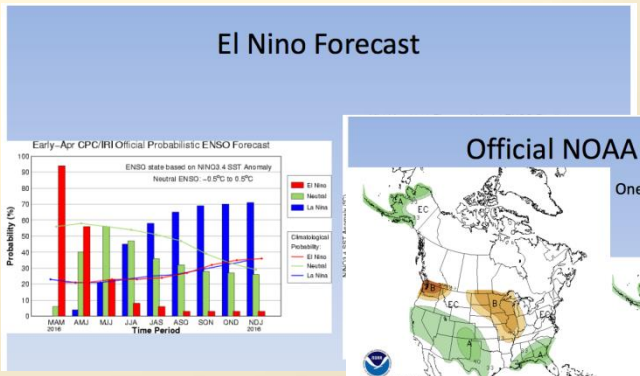


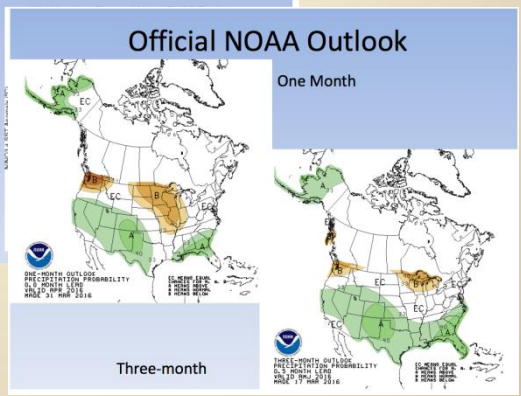
- Integrate stakeholder input to inform drought mitigation, planning and messaging
- Engage in scientific research that addresses key information gaps
- Collect drought impact data and conduct vulnerability assessments

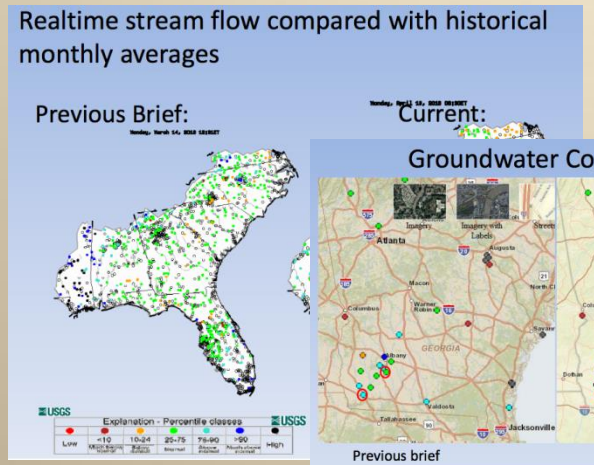
ACF River Basin Webinars

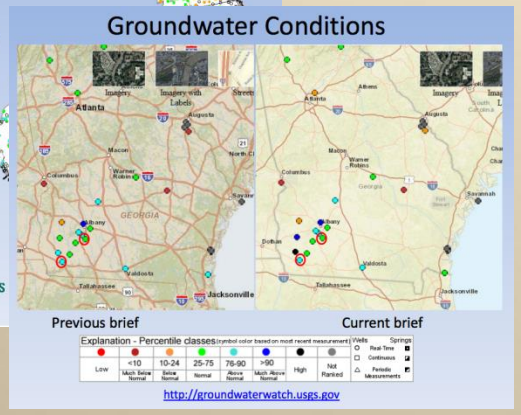
April 2016 Sample

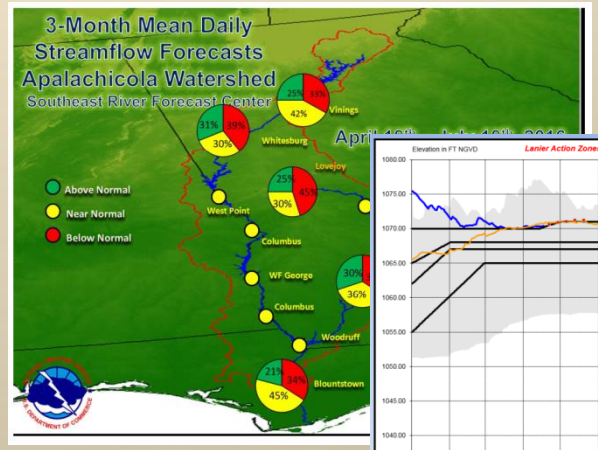


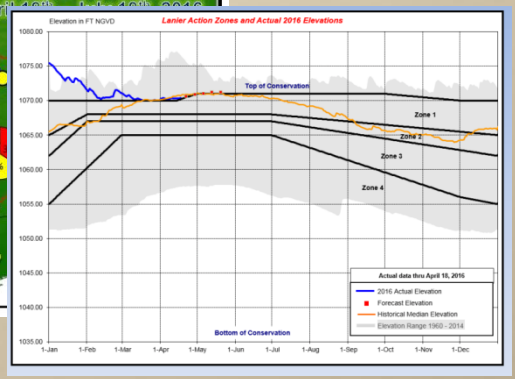












SERFC Water Resources Outlook Briefing - https://www.weather.gov/serfc/wro

ACF Webinar – http://aaes.auburn.edu/wrc/extension-outreach/drought/

Coastal Carolinas DEWS

- Indicators and tools
  - CSI
  - Coastal zone fire risk
  - Blue crab fishery forecast
  - Hydroclimate Extreme Atlas
- CoCoRaHS- condition monitoring project
- Outreach
  - Workshops
  - Interviews
  - Over 50 presentations


Source: Dan Tufford


Source: Ed Christopher

Priorities of the Coastal Carolinas DEWS

1. Foster stakeholder collaboration, coordination and relationship building
2. Improve drought early warning outreach and communication capacity
3. Improve coastal drought monitoring and use of drought indicators and indices
4. Improve understanding of coastal drought impacts and vulnerabilities
5. Incorporate coastal drought implications into resource management


Source: Michael Childress


Source: Ed Christopher

Coastal Salinity Index

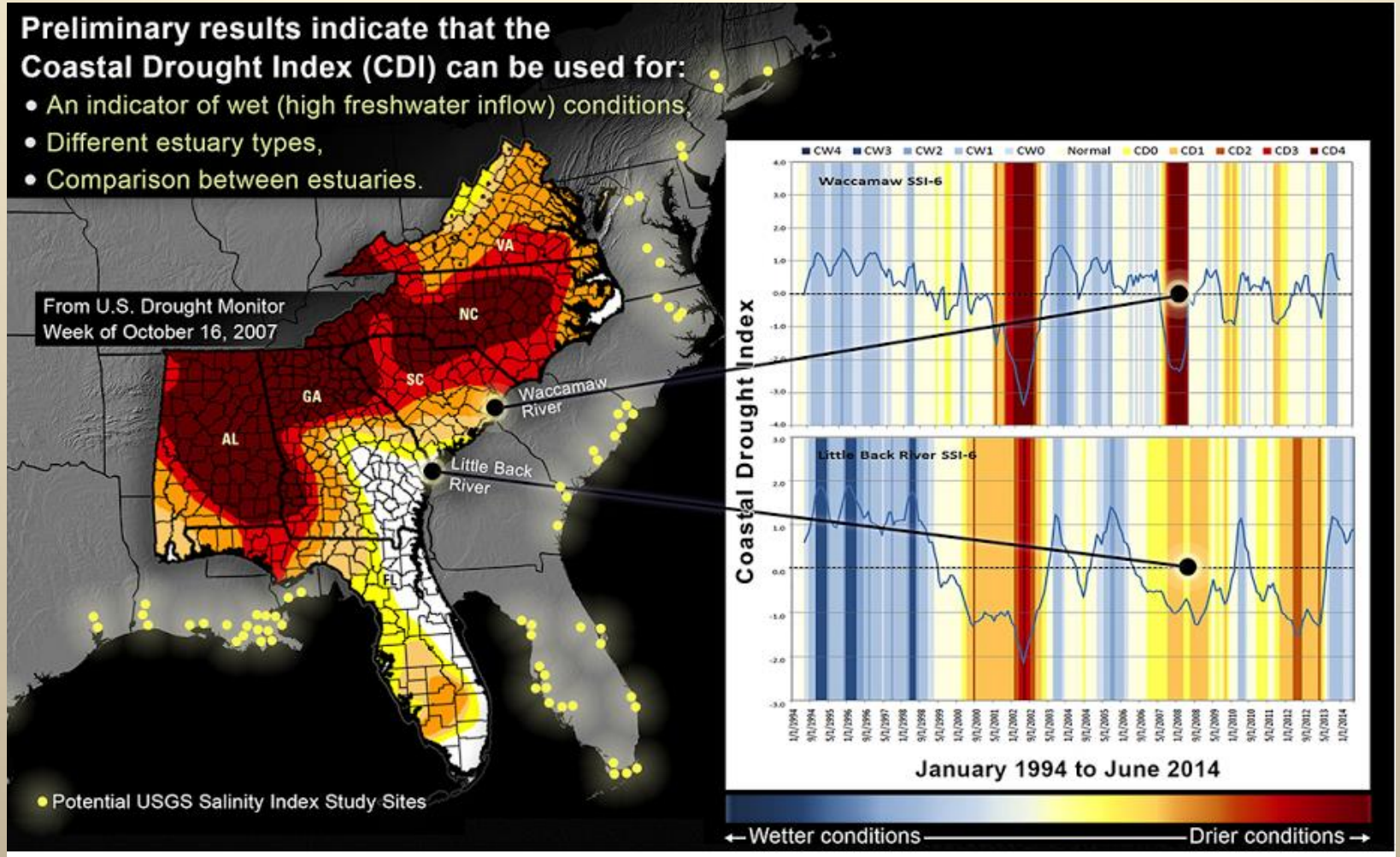
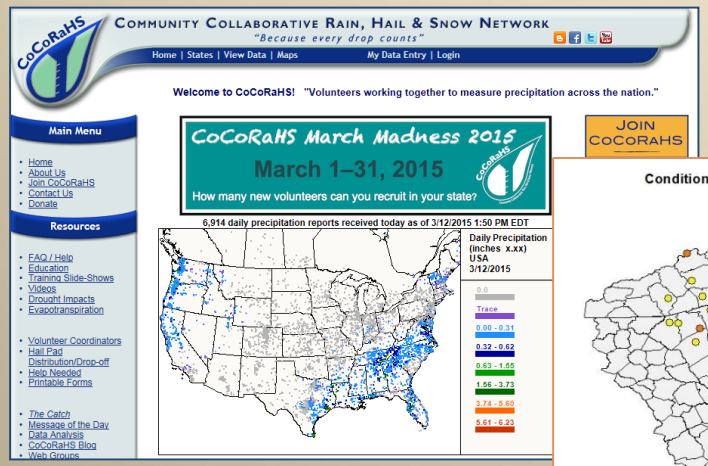


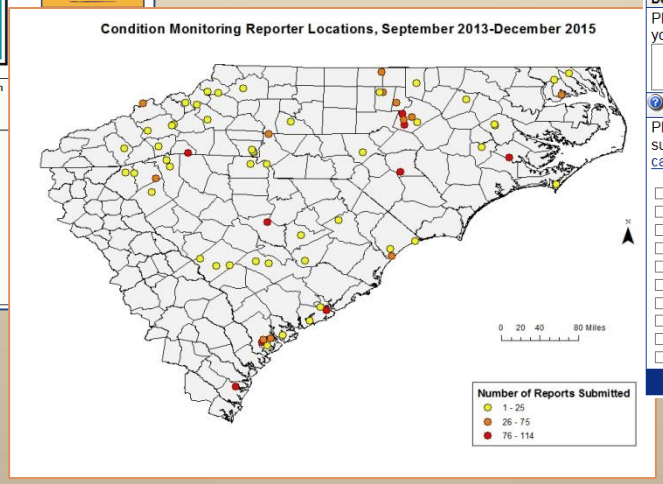
Figure 5. The Coastal Drought Index (CDI) for the Waccamaw River and Little Back River and the U.S. Drought Monitor map for the week of October 16, 2007.

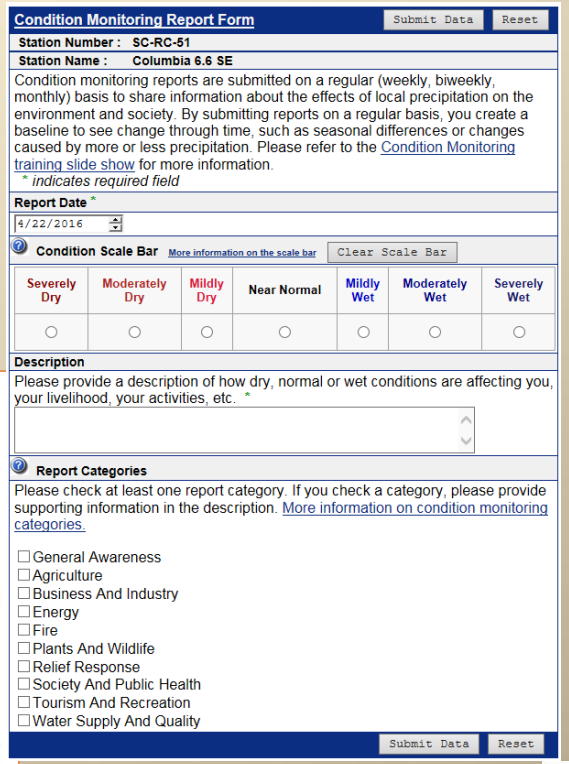
CoCoRaHS Citizen Science Condition Monitoring

http://cisa.sc.edu/cocorahs.html

- Improve understanding of impacts
- Assess the usefulness of citizen science engagement as a means to monitor drought conditions and inform decision
- 68 volunteers and over 1,500 reports
  - Sept 2013 – Dec 2015





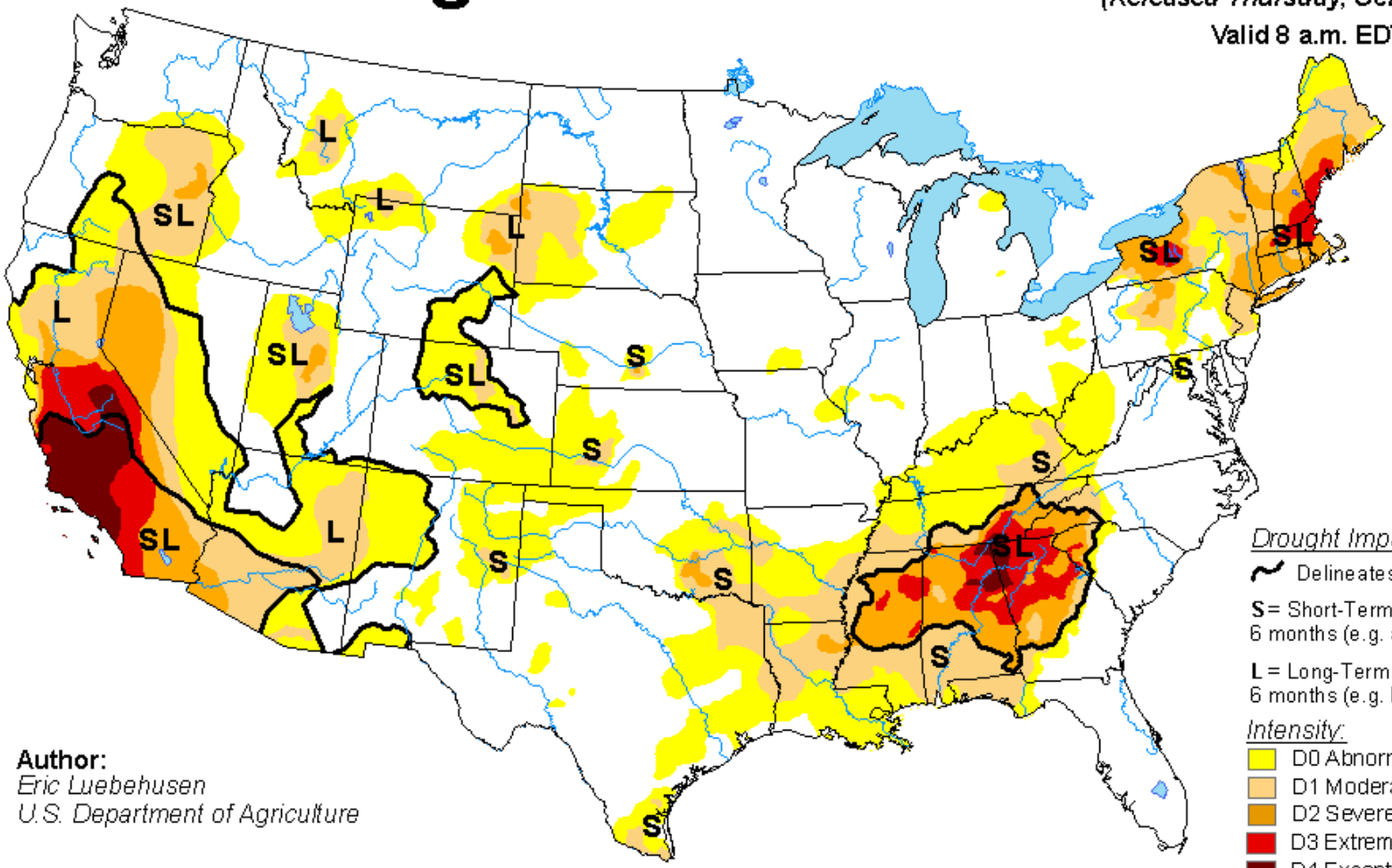


U.S. Drought Monitor

October 18, 2016

(Released Thursday, Oct. 20, 2016)

Valid 8 a.m. EDT



Author:
Eric Luebehusen
U.S. Department of Agriculture

Drought Impact Types:

Delineates dominant impacts

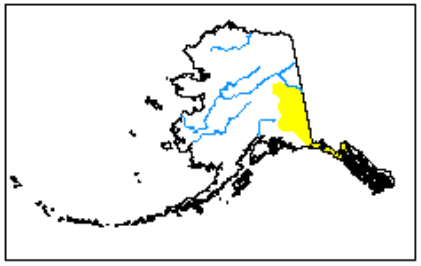
S = Short-Term, typically less than 6 months (e.g. agriculture, grasslands)

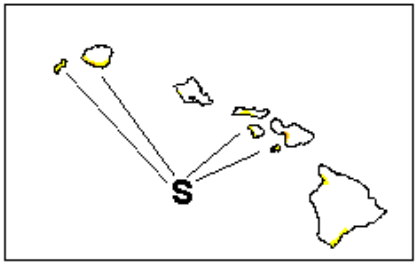
L = Long-Term, typically greater than 6 months (e.g. hydrology, ecology)

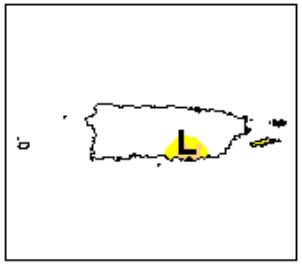
Intensity:

- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.







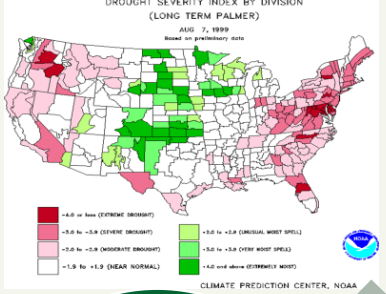
USDA

National Drought Mitigation Center

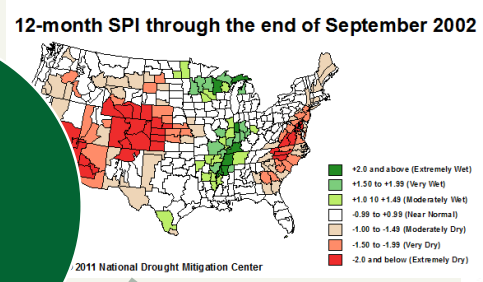
NOAA

http://droughtmonitor.unl.edu/

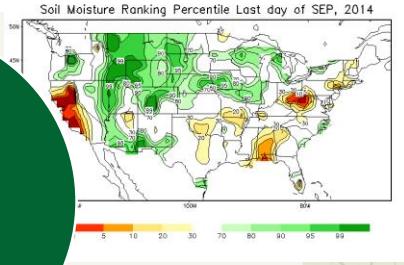
National Drought Mitigation Center



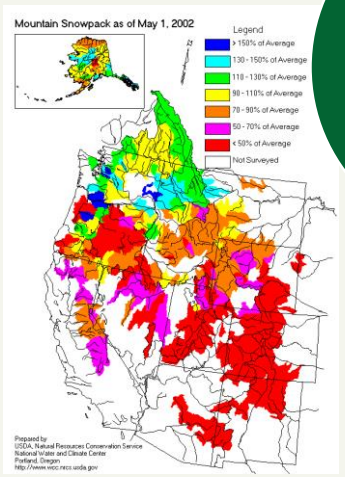
Indices: SPI/PDSI



Soil Moisture

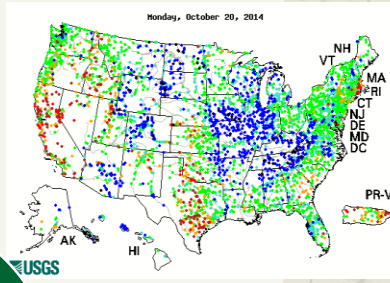


Snow

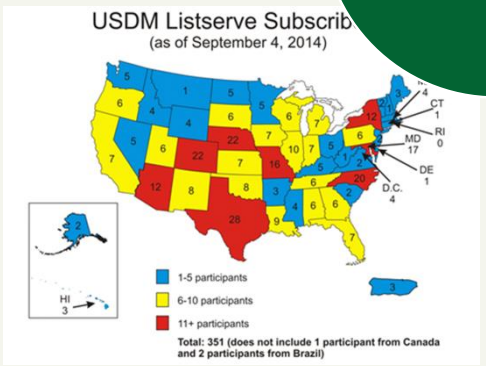


Most of the information analyzed each week falls into one of these categories.

Authors now use roughly ***40-50 unique indicators*** while creating the U.S. Drought Monitor map, but not all areas are represented equally by all pieces of data.

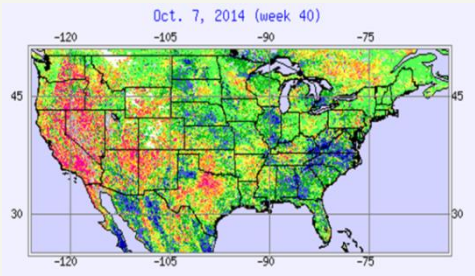


Expert Local Input



Streamflow

Remote Sensing



USDA

U.S. Drought Monitor Objectives

- Assessment of **current** conditions and **current** impacts
- The U.S. Drought Monitor is ***NOT*** a model
  - The map is made manually each week based off the previous map
- The U.S. Drought Monitor is ***NOT*** interpreting just precipitation
- The U.S. Drought Monitor is ***NOT*** a forecast or drought declaration
  - Can be used in this way though
- Identifying **impacts**
  - "**S**" short-term impacts, "**L**" long-term impacts or "**SL**" for a combination of both
- Incorporate **local expert** input
  - Accomplished via email and impact reports
- Authors try to be as **objective** as possible (using the percentiles methodology)
  - The data ***must*** support the depiction on the map
- ***"Convergence of evidence"*** approach

Critical Elements of the USDM Process

National Drought Mitigation Center

- ***Impact*** collection is crucial

- ***Flexible*** and adaptable to new data/products as they come on-line (i.e. EDDI, ESI, QuickDRI)

- Information ***dissemination***
  - ***"Derived products"*** are critical; raw data is shared, but "stays" with the creator/keeper of the data

  - ***Transparency***

USDA

Contact Information

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